Answer

Incarcerated Sigmoid Volvulus in a Right Inguinal Hernia

The patient underwent an exploratory laparotomy and right groin exploration to look for signs of obstruction due to the incarcerated right inguinal hernia. The incarcerated bowel in the hernia sac was found to be a redundant sigmoid colon that had volvulized. Despite incarceration lasting several days, as well as volvulization, the colon sustained serosal tears but was not gangrenous. Dissection of the groin revealed a significant amount of scar tissue and old mesh from prior hernia repairs. Both direct and indirect components to the hernia sac were discovered. The preperitoneal inguinal hernia was repaired and a sigmoid colectomy, with end colostomy and a Hartmann procedure, was performed.

Given that this patient already had a sigmoid volvulus, we elected to perform a sigmoid colectomy rather than risk another volvulus in the postoperative period. After performing the Hartmann procedure, we attempted to repair the inguinal hernia via a transabdominal approach. The patient lacked a posterior wall in the inguinal region given that this was the third occurrence of the hernia. An intra-abdominal mesh sheet onlay was contraindicated because the colon was resected in the setting of obstruction and unprepped bowel. Therefore, following copious irrigation, we elected to proceed with a preperitoneal herniorrhaphy using a plug and patch. Given the patient's history and physical findings, the initial differential diagnosis included incarceration of the small bowel or (less likely) incarceration of the large bowel, in the right inguinal hernia. The imaging studies provided additional information to suggest that the point of obstruction was distal to the small bowel. The presence of air fluid levels in the small bowel with a dilated cecum and an omega sign that extended to the right upper quadrant on plain radiographs corroborated this finding. In fact, the presence of the latter sign on plain radiographs helped yield the diagnosis of sigmoid volvulus but did not necessarily suggest that the sigmoid colon was also incarcerated in the right inguinal hernia.

There are 3 classifications of large-bowel obstruction (LBO)[1,2]: intraluminal obstructions (ie, foreign bodies, barium inspissation, and fecal impaction), intramural obstructions (ie, colonic neoplasias, as well as inflammatory processes such as Crohn's disease, ulcerative colitis, and diverticulitis), and extrinsic obstructions (ie, internal or external hernias, volvulus of the sigmoid colon or cecum, external mass effect from abscesses, carcinomatosis, endometriosis, pregnancy, pelvic actinomycosis,[3] or intra-abdominal adhesions). The differential diagnosis of LBO should also include pseudo-obstruction, or Ogilvie syndrome.

External hernias rarely cause LBO. In fact, there are fewer than 5 cases of colonic obstructions associated with inguinal hernias reported in the literature. Only 3 cases of ipsilateral inguinal hernias containing sigmoid colon or cecum have been associated with LBO.[4] In contrast, there are none associated with a contralateral hernia. While this condition is rare, 1 report highlighted the increased potential for malignancies of the colon in patients with colonic incarceration within an inguinal hernia.[5] This suggests that this patient population should undergo thorough evaluation for colonic malignancy.

In contrast to external herniation, internal herniation concurrent with LBO has been more frequently reported. In the absence of groin hernias, LBO, with either a sigmoid volvulus or its variant ileosigmoid knotting, has been reported in a case series of 12 patients.[6] There have also been reports of herniation of a sigmoid volvulus through transverse mesocolon,[7] transomental herniation mimicking sigmoid volvulus,[8] and retrorectal hernia of the sigmoid colon associated with diverticulitis.[9] Together, hernias, either internal or external, are a rare cause of LBO and are even less frequently coincident with sigmoid volvulus.

This patient's extrinsic mechanical LBO was caused by both the incarcerated right inguinal hernia containing a redundant sigmoid colon, as well as volvulization of the same segment of colon. Large-bowel obstructions secondary to a volvulus are infrequent while those due to a contralateral inguinal hernia are extremely rare. To our knowledge, this is the first report of a sigmoid colonic incarceration in the right groin as well as incarceration of a sigmoid volvulus in any inguinal hernia.

Overall, the patient's postoperative course was complicated by the development of an intra-abdominal abscess and inguinal seroma that were drained percutaneously on postoperative days 13 and 19, respectively. The patient subsequently did well and was discharged 21 days postoperatively.

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